# ASD Weekly Highlights for the Week Ending 22-Sep-2006

## Operations

- There was no beam operation from September 16 through 22. Therefore Operations recorded 168 hours of Programmed Shutdown,

- Andy Arvin is working with the Ion Source Group
- Saul Matovu, Charles Peters, Vaughn Patiana and Roger Housman are working on Datastream.
- David Brown is working with Diagnostics and Controls
- Jennifer Kozak is working on Controls Screens and scripts.
- Bill Krapf is working with Ted Williams on Training
- Louis Rupp, Zafer Kurson, Ben Sanchez, Nic Luciano and Larry Longcoy are staffing shifts

## Accelerator Physics

## RF Systems

## Ion Source

## Instrumentation and Controls

- A 5-minute delay timer was added to the FE LEBT vacuum turbo pumps' "low water flow" shutdown interlock.

- The CHoMPS MPS output card is out for fabrication, and we are waiting on two parts for assembly next week. The FPGA design for this board has been coded and simulated.

- A meeting was held to determine the requirements for refining the SCL vacuum Channel Access security rules. OPI screens for the new SCL insulating vacuum system are being developed.

- Arc detector test software has been tested, and we are now waiting on the "SRF Task Force" to approve deployment.

- Two Ring HPRF "PanelView" terminals were tested and are online now. Two more PanelView terminals will be online soon as well.

- Fixes to the Ring LLRF software were set up on the new accelerator server accl1.

- Wiring of the Target moderator hydrogen circulator variable frequency drives (VFD) to the PLC control system was completed. The three variable frequency drives (VFDs) were configured to accept commands from the PLC and provide feedback to the PLC. PLC logic was updated to provide on/off control of the VFDs. All 3 VFDs were successfully tested from the EPICS screens. The control loops for the drives were tuned and they now provide adequate speed control of the circulators.

- The present version of our 'autosave' software is being updated with fixes from APS.

- The PPS interface to the Ring and RTBT Gamma blockers has been installed and tested. Certification for both units will occur next week. All Chipmunks scheduled for re-calibration during this outage have been calibrated. A defective PLC counter was discovered during this work. Additional testing on an alternative channel will be required prior to startup. This testing will be conducted next Monday (9/25/06). Chipmunks in the Target Building have been moved temporarily to accommodate maintenance/ construction. These units will be replaced prior to beam operation.
- Annual sensor replacement for the LINAC ODH oxygen transmitters is complete

- The scraper electronics chassis is complete, tested, and ready for interface to the PC. We are completing work on a dual Charge Integrator chassis. The boards are built, tested, and ready for chassis assembly and testing. The new fast BLM electronics spec and design are being finalized.

- Our "Computers on Wheels" (COWs) on the Accelerator VLAN, as well as the OPI's in the CCR and FE Control Room, were upgraded.

- An Alarm Handler planning document is being developed.

## Diagnostics

- BCMs:
- We are testing the beam-accounting up to 15 Hz for the October run. Channel 14 will take into account the beam on target.

- Electron Detectors:
- Vacuum group installed three electron detectors in the ring for us. With the exception of the injection electron detector, the rest are installed. We only have one prototype electronics for the October.

- BPMs:

- 16 SCL BPM electronics are modified and recalibrated. These NADs did not have enough cooling. FPGA on PCI cards were malfunctioning. LINAC systems are operational.

- SCL Laser:
- The Spectral-Physics laser for the SCL is repaired. The fundamental power is 1 Joule and the third harmonic is 411 mJ. The laser power from the SCL laser room to the station one is about 60% -- as expected. The following changes are made to the optics and vision controllers. -- (1) Replaced beam samplers in stations 17,5 and added one to telescope box. (2) A watec Camera was also installed in station 23 to monitor the laser light.

- Misc. QA of all diagnostics will start on Monday in preparation for the run.

## SRF Facility

## SRF Task Force

## Survey and Alignment

- **Linac**
  Mapped components in the LEDPS area. Re-aligned QH00. Mapped "hot spots" on beam pipe in Linac Dump area.

- **Ring**
  Aligned gamma blocker near the Ring Injection dump. Performed elevation monitoring survey of the floor monuments in the Ring Injection dump area.

- **RTBT**
  Re-aligned RTBT quads QV21 through QV25, and downstream-most collimator, due to ongoing tunnel settlement.

- **Target / Experiment Lines**
  Beam line 2: Performed as-built survey in the sample tank and set control points, to enable accurate replacement of sample vacuum shell.
  Beam line 3: Aligned chopper and chopper stand.

## Cryo Systems

## Mechanical Systems

## Electrical Systems

Power Supplies

- Supported the vacuum group effort to install turbo pump systems for the cryomodules by pulling cables, terminating cable ends, hanging cable tray, etc.
- Supported the magnet measurement group by performing LOTO on several power supplies in the ring service building to facilitate maintenance on several magnets
- The main ring dipole power supply was restored back to the pre-maintenance state by re-inserting the terminal block connectors. This should permit the PPS system to work properly without the bypass in place.

Modulator

- Final testing of HVCM CCL-Mod2, -Mod3, SCL-Mod12, -Mod15, -Mod18, -Mod21 complete post-October upgrades
- MEBT Chopper structure cleaning and assembly successful. Scraper plate spacers modified to decrease aperture by 3.0 mm, thereby offering greater protection of meander line from beam effects.
- Spare LEBT chopper pulsers completed at vendor, factory acceptance testing scheduled for next week according to SNS acceptance testing procedure.
- Next-generation RFQ modulator boost transformer winding assemblies shipped this week with installation slated for next week.
- DTL-Mod1 tank inspection/measurements complete, with no evidence found to indicate why a current imbalance was observed on C-phase.
- Dynamic Fault Detection Chassis PCBs received and stuffed (RM), testing slated for next week and assembly planned for October.

AC power and installation:

- Prepared for KL-2UPS1 replacement by identifying alternate power sources for UPS panel
- Prepared and issued DCN for Front End Chiller modifications.
- Prepared and issued DCN for BL-02TU power and communications additions.
- Prepared and issued DCN for floor receptacles in CLO C-156.
- Reviewed RFTF Mezzanine electrical design.
- Reviewed overall power requirements for Target Instruments and transformer TA-SS2.
- Evaluated bids and bid check estimate for CHL Generator Installation project.
- Reviewed requirements for additional cell phone antenna in Target Building.
- Procure connectors and provide drawing for Insulating Vacuum system for Klystron
- RFTF mezzanine design conflicts and relocation of equipment to support mezzanine installation

- Reviewed BL3 Electrical Drawings for signatures and estimate of materials for installation purposes
- Repair CHL Recovery Compressor
- Repair CE Motor Starter in East MUA
- Completed 2 VFD Motor Controls for Hydrogen Utility Room in Target
- Installed 2 new BLM Signal Cables in Ring Injection Dump Area
- AC Panel Maintenance for RNSS4-Cir. #3 and #6
- Repair PPS Signal for Main Ring Dipole Power Supply
- Completed Installation and Programming for HEBT DP Switches
- Insulate Crane Buss around Injection Dump Area of Ring Tunnel.